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Infographic: Winning road cycle races: a Team Sky perspective **Winning road cycle races: a Team Sky perspective**

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TEAM
sky

WINNING ROAD CYCLE RACES

A SPORT MEDICINE PERSPECTIVE

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MEDITERRANEAN



1 MEDITERRANEAN AND WELL-BALANCED DIET (1)(2).

2 DIET WHEN ON-BIKE

When riding your bike for more than **one hour**, generally aim for a carbohydrate intake of **60g/hour** and use a mixture of water and electrolyte drinks, drinking to thirst.



60mins

3 HYDRATION

Monitor the colour of your urine to assess your **hydration**, aiming for a light yellow colour.



4 PLAN AND MONITOR YOUR TRAINING

Generally, week-to-week increases in training volume should be no more than **10%**. A 'hard' session should be followed by a lighter session, with at least **one rest day** per week.



5 CROSS TRAINING

Do at least one **non-bike training** session per week. Strength and conditioning work has been shown to improve bike speed and endurance capacity (3), without causing weight gain.



6 MULTI-DISCIPLINARY SUPPORT TEAM

includes doctors, psychological support, Physiotherapy, nutritionists, sport science and 'carers'.



7 POST-EXERCISE RECOVERY STRATEGIES

- Compression garments
- Ice-baths
- Post-race **massage** and **stretching**
- Good quality **sleep**, aiming for at least **8 hours** sleep per night.
- Good personal **hygiene**.
- Appropriate '**stress**' management.



8 REDUCING EFFECTS OF TRAVEL

- Chewing** gum with xylitol e.g. pre-flights, to reduce risk of infections when flying
- Stay well-**hydrated** during the flight, avoiding alcohol, and keep mobile in-flight.
- Start **adjusting** to the new time zone before you leave.
- Compression **stockings**.



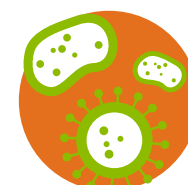
9 HEALTH SCREENING

- Pre-season **medical**
- Regular **blood screen**.
- Vaccinations** – influenza; hepatitis A and B; traveller's diarrhoea.
- Regular '**wellbeing**' monitoring via an app.



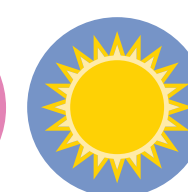
10 ON-RACE HEALTH MONITORING

- First pass urine osmolality and early morning weight checks to **assess hydration**.
- Early morning **health screen** to detect infections early.



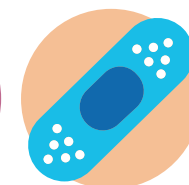
11 TEAM PROTOCOLS

- Infection prevention** and antibiotic protocol.
- Hand **hygiene**.
- Exercise in the **heat** guidelines
- Altitude** camp protocol. Generally 'live high, train low'.



12 EXPERT MANAGEMENT OF COMMON CYCLING MEDICAL ISSUES

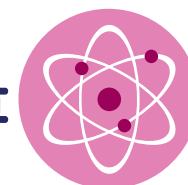
- Infection** – commonest reason for being 'off bike'. For example, for common cold viral infections use **zinc** lozenges at a dose of **80mg/day** started within 24 hours of symptoms and continued for up to 2 weeks.



- Trauma**. Road rash, with associated wound management, and fractures from falls, especially management of clavicular fractures.
- Overuse** injuries, especially common around the knee (e.g. patellofemoral pain) and low back pain.

13 ANTI-DOPING

- Education of the athlete around anti-doping issues and ensure they are kept up-to-date on **WADA** anti-doping **guidelines**.
- Knowledge and understanding of the athlete's **biological passport**.
- All athlete medication checked with **globaldro.com**.



14 DIETARY SUPPLEMENTATION

- Generally not needed if you have a well-balanced diet but ones to consider with appropriate review:
- Vitamin D**, particularly in winter months.
 - Probiotics**.
 - Iron**, particularly if considering altitude training.



REFERENCES

- (1) de Lorgeril M, Salen P, Martin J, Monjaud I, Delaye J, Mamelle N. Mediterranean diet, traditional risk factors, and the rate of cardiovascular complications after myocardialinfarction: final report of the Lyon Diet Heart Study.. Circulation 1999;99(6):779-85.
- (2) Rees K, Hartley L, Flowers N, Clarke A, Hooper L, Thorogood M, et al. 'Mediterranean' dietary pattern for the primary prevention of cardiovascular disease. COCHRANE DATABASE OF SYSTEMATIC REVIEWS 2013;12(8):CD009825.
- (3) Mujika I, Rønnestad B, Martin D. Effects of Increased Muscle Strength and Muscle Mass on Endurance-Cycling Performance.. International Journal of Sports Physiology and Performance 2016;11(3):283-9.